

### Subpart D—Locomotive Crashworthiness Design Requirements

- 229.141 Body structure, MU locomotives.
- 229.201 Purpose and scope.
- 229.203 Applicability.
- 229.205 General requirements.
- 229.206 Design requirements.
- 229.207 New locomotive crashworthiness design standards and changes to existing FRA-approved locomotive crashworthiness design standards.
- 229.209 Alternative locomotive crashworthiness designs.
- 229.211 Processing of petitions.
- 229.213 Locomotive manufacturing information.
- 229.215 Retention and inspection of designs.
- 229.217 Fuel tank.
- APPENDIX A TO PART 229—FORM FRA 6180-49A [NOTE]
- APPENDIX B TO PART 229—SCHEDULE OF CIVIL PENALTIES
- APPENDIX C TO PART 229—FRA LOCOMOTIVE STANDARDS—CODE OF DEFECTS [NOTE]
- APPENDIX D TO PART 229—CRITERIA FOR CERTIFICATION OF CRASHWORTHY EVENT RECORDER MEMORY MODULE
- APPENDIX E TO PART 229—PERFORMANCE CRITERIA FOR LOCOMOTIVE CRASHWORTHINESS
- APPENDICES F–G TO PART 229 [RESERVED]
- APPENDIX H TO PART 229—STATIC NOISE TEST PROTOCOLS—IN-CAB STATIC

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SOURCE: 45 FR 21109, Mar. 31, 1980, unless otherwise noted.

### Subpart A—General

#### § 229.1 Scope.

This part prescribes minimum Federal safety standards for all locomotives except those propelled by steam power.

#### § 229.3 Applicability.

(a) Except as provided in paragraphs (b) through (e) of this section, this part applies to all standard gage railroads.

(b) This part does not apply to:

(1) A railroad that operates only on track inside an installation which is not part of the general railroad system of transportation; or

(2) Rapid transit operations in an urban area that are not connected with the general railroad system of transportation.

(c) Paragraphs (a) and (b) of § 229.125 do not apply to Tier II passenger equip-

ment as defined in § 238.5 of this chapter (*i.e.*, passenger equipment operating at speeds exceeding 125 mph but not exceeding 150 mph).

(d) On or after November 8, 1999, paragraphs (a)(1) and (b)(1) of § 229.141 do not apply to “passenger equipment” as defined in § 238.5 of this chapter, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219, and § 238.223 of this chapter by operation of § 238.201(a)(2) of this chapter.

(e) Paragraphs (a)(2) through (a)(4), and (b)(2) through (b)(4) of § 229.141 do not apply to “passenger equipment” as defined in § 238.5 of this chapter that is placed in service for the first time on or after September 8, 2000, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219, and § 238.223 of this chapter by operation of § 238.201(a)(2) of this chapter.

[54 FR 33229, Aug. 14, 1989, as amended at 64 FR 25659, May 12, 1999]

#### § 229.4 Information collection.

(a) The information collection requirements in this part have been reviewed by the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1980, Public Law 96–511, and have been assigned OMB control number 2130–0004.

(b) The information collection requirements are found in the following sections: §§ 229.9, 229.17, 229.21, 229.23, 229.25, 229.27, 229.29, 229.31, 229.33, 229.55, 229.103, 229.105, 229.113, 229.121, 229.135, and appendix H to part 229.

[50 FR 6953, Feb. 19, 1985, as amended at 58 FR 36613, July 8, 1993; 71 FR 63136, Oct. 27, 2006]

#### § 229.5 Definitions.

As used in this part—

*AAR* means the Association of American Railroads.

*Acceptable quality level (AQL)*. The AQL is expressed in terms of percent defective or defects per 100 units. Lots having a quality level equal to a specified AQL will be accepted approximately 95 percent of the time when using the sampling plans prescribed for that AQL.

*Anti-climbers* means the parts at the ends of adjoining rail vehicles in a

train that are designed to engage when subjected to large buff loads to prevent the override of one vehicle by another.

*Associate Administrator for Safety* means the Associate Administrator for Safety, Federal Railroad Administration, or that person's delegate as designated in writing.

*Break* means a fracture resulting in complete separation into parts.

*Build date* means the date on which the completed locomotive is shipped by the manufacturer or remanufacturer to the customer, or if the railroad manufactures or remanufactures the locomotive itself, the date on which the locomotive is released from the manufacture or remanufacture facility.

*Cab* means that portion of the superstructure designed to be occupied by the crew operating the locomotive.

*Carrier* means *railroad*, as that term is in this section.

*Collision posts* means structural members of the end structures of a rail vehicle that extend vertically from the underframe to which they are securely attached and that provide protection to occupied compartments from an object penetrating the vehicle during a collision.

*Corner posts* means structural members located at the intersection of the front or rear surface with the side surface of a rail vehicle and which extend vertically from the underframe to the roof.

*Commuter service* means the type of railroad service described under the heading "Commuter Operations" in 49 CFR part 209, Appendix A.

*Commuter work train* is a non-revenue service train used in the administration and upkeep service of a commuter railroad.

*Control cab locomotive* means a locomotive without propelling motors but with one or more control stands.

*Controlling remote distributed power locomotive* means the locomotive in a distributed power consist that receives the coded signal from the lead locomotive consist of the train whether commanded automatically by the distributed power system or manually by the locomotive engineer.

*Crack* means a fracture without complete separation into parts, except that castings with shrinkage cracks or hot

tears that do not significantly diminish the strength of the member are not considered to be cracked.

*Cruise control* means a device that controls locomotive power output to obtain a targeted speed. A device that functions only at or below 30 miles per hour is NOT considered a "cruise control" for purposes of this part.

*Data element* means one or more data point or value reflecting on-board train operations at a particular time. Data may be actual or "passed through" values or may be derived from a combination of values from other sources.

*dB(A)* means the sound pressure level in decibels measured on the A-weighted scale.

*Dead locomotive* means—

(1) A locomotive, other than a control cab locomotive, that does not have any traction device supplying tractive power; or

(2) A control cab locomotive that has a locked and unoccupied cab.

*Decibel (dB)* means a unit of measurement of sound pressure levels.

*Defective* means, for purposes of section 229.129 of this part, a locomotive equipped with an audible warning device that produces a maximum sound level in excess of 110 dB(A) and/or a minimum sound level below 96 dB(A), as measured 100 feet forward of the locomotive in the direction of travel.

*Designated service* means exclusive operation of a locomotive under the following conditions:

(1) The locomotive is not used as an independent unit or the controlling unit in a consist of locomotives except when moving for the purposes of servicing or repair within a single yard area;

(2) The locomotive is not occupied by operating or deadhead crews outside a single yard area; and

(3) The locomotive is stenciled "Designated Service—DO NOT OCCUPY."

*Design standard* means a criterion adopted by an industry or voluntary consensus standards body, which addresses the design of a locomotive with respect to its crashworthiness and crashworthiness features.

*Distributed power system* means a system that provides control of a number of locomotives dispersed throughout a

train from a controlling locomotive located in the lead position. The system provides control of the rearward locomotives by command signals originating at the lead locomotive and transmitted to the remote (rearward) locomotives.

*DMU locomotive* means a diesel-powered multiple unit operated locomotive with one or more propelling motors designed to carry passenger traffic.

*Excessive noise report* means a report by a locomotive cab occupant that the locomotive is producing an unusual level of noise that significantly interferes with normal cab communications or that is a concern with respect to hearing conservation.

*Electronic air brake* means a brake system controlled by a computer which provides the means for control of the locomotive brakes or train brakes or both.

*Event recorder* means a device, designed to resist tampering, that monitors and records data, as detailed in § 229.135(b), over the most recent 48 hours of operation of the electrical system of the locomotive on which the device is installed. However, a device, designed to resist tampering, that monitors and records the specified data only when the locomotive is in motion meets this definition if the device was installed prior to November 5, 1993 and if it records the specified data for the last eight hours the locomotive was in motion.

*Event recorder memory module* means that portion of the event recorder used to retain the recorded data as detailed in § 229.135(b).

*FRA* means the Federal Railroad Administration.

*Fuel tank, external* means a fuel containment vessel that extends outside the car body structure of a locomotive.

*Fuel tank, internal* means a fuel containment vessel that does not extend outside the car body structure of a locomotive.

*High voltage* means an electrical potential of more than 150 volts.

*In-service event recorder* means an event recorder that was successfully tested as prescribed in § 229.27(d) and whose subsequent failure to operate as intended, if any, is not actually known

by the railroad operating the locomotive on which it is installed.

*Lateral* means the horizontal direction perpendicular to the direction of travel.

*Lead locomotive* means the first locomotive proceeding in the direction of movement.

*Lite locomotive* means a locomotive or a consist of locomotives not attached to any piece of equipment or attached only to a caboose.

*Locomotive* means a piece of on-track equipment other than hi-rail, specialized maintenance, or other similar equipment—

(1) With one or more propelling motors designed for moving other equipment;

(2) With one or more propelling motors designed to carry freight or passenger traffic or both; or

(3) Without propelling motors but with one or more control stands.

*Locomotive cab* means the compartment or space on board a locomotive where the control stand is located and which is normally occupied by the engineer when the locomotive is operated.

*Longitudinal* means in a direction parallel to the normal direction of travel.

*Lot* means a collection of locomotives, equipped with the same horn model, configuration, and location, and the same air pressure and delivery system, which has been manufactured or processed under essentially the same conditions.

*Mandatory directive* means any movement authority or speed restriction that affects a railroad operation.

*Manufacture* means the act of constructing a locomotive.

*Modesty lock* means a latch that can be operated in the normal manner only from within the sanitary compartment, that is designed to prevent entry of another person when the sanitary compartment is in use. A modesty lock may be designed to allow deliberate forced entry in the event of an emergency.

*Monocoque design locomotive* means a locomotive design where the shell or skin acts as a single unit with the supporting frame to resist and transmit the loads acting on the locomotive.

*MU locomotive* means a multiple unit operated electric locomotive—

(1) With one or more propelling motors designed to carry freight or passenger traffic or both; or

(2) Without propelling motors but with one or more control stands and a means of picking-up primary power such as a pantograph or third rail.

*Narrow-nose locomotive* means a locomotive with a short hood that spans substantially less than the full width of the locomotive.

*Occupied service* means the operation of a locomotive when the cab is physically occupied by a person.

*Other short-haul passenger service* means the type of railroad service described under the heading “Other short-haul passenger service” in 49 CFR part 209, Appendix A.

*Permanent deformation* means the undergoing of a permanent change in shape of a structural member of a rail vehicle.

*Potable water* means water that meets the requirements of 40 CFR part 141, the Environmental Protection Agency’s Primary Drinking Water Regulations, or water that has been approved for drinking and washing purposes by the pertinent state or local authority having jurisdiction. For purposes of this part, commercially available, bottled drinking water is deemed potable water.

*Powered axle* is an axle equipped with a traction device.

*Power car* means a rail vehicle that propels a Tier II passenger train or is the lead vehicle in a Tier II passenger train, or both.

*Railroad* means all forms of non-highway ground transportation that run on rails or electromagnetic guideways, including:

(1) Commuter or other short-haul rail passenger service in a metropolitan or suburban area, and

(2) High speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

*Remanufacture* means the act of constructing a remanufactured locomotive.

*Remanufactured locomotive* means a locomotive rebuilt or refurbished from a previously used or refurbished underframe (“deck”), containing fewer than 25% previously used components (measured by dollar value of the components). For calculation purposes, the percentage of previously used components is determined with equivalent value of new parts and is calculated using dollar values from the same year as the new parts used to remanufacture the locomotive.

*Roof rail* means the longitudinal structural member at the intersection of the side wall and the roof sheathing.

*Sanitary* means lacking any condition in which any significant amount of filth, trash, or human waste is present in such a manner that a reasonable person would believe that the condition might constitute a health hazard; or of strong, persistent, chemical or human waste odors sufficient to deter use of the facility, or give rise to a reasonable concern with respect to exposure to hazardous fumes. Such conditions include, but are not limited to, a toilet bowl filled with human waste, soiled toilet paper, or other products used in the toilet compartment, that are present due to a defective toilet facility that will not flush or otherwise remove waste; visible human waste residue on the floor or toilet seat that is present due to a toilet that overflowed; an accumulation of soiled paper towels or soiled toilet paper on the floor, toilet facility, or sink; an accumulation of visible dirt or human waste on the floor, toilet facility, or sink; and strong, persistent chemical or human waste odors in the compartment.

*Sanitation compartment* means an enclosed compartment on a railroad locomotive that contains a toilet facility for employee use.

*Self-monitoring event recorder* means an event recorder that has the ability to monitor its own operation and to display an indication to the locomotive operator when any data required to be stored are not stored or when the stored data do not match the data received from sensors or data collection points.

*Semi-monocoque design locomotive* means a locomotive design where the skin or shell acts, to some extent, as a single unit with the supporting frame to resist and transmit the loads acting on the locomotive.

*Semi-permanently coupled* means coupled by means of a drawbar or other coupling mechanism that requires tools to perform the uncoupling operation.

*Serious injury* means an injury that results in the amputation of any appendage, the loss of sight in an eye, the fracture of a bone, or confinement in a hospital for a period of more than 24 consecutive hours.

*Short hood* means the part of the locomotive above the underframe located between the cab and the nearest end of the locomotive.

*Standards body* means an industry and/or professional organization or association which conducts research and develops and/or issues policies, criteria, principles, and standards related to the rail industry.

*Switching service* means the classification of railroad freight and passenger cars according to commodity or destination; assembling cars for train movements; changing the position of cars for purposes of loading, unloading, or weighing; placing locomotives and cars for repair or storage; or moving rail equipment in connection with work service that does not constitute a train movement.

*Throttle position* means any and all of the discrete output positions indicating the speed/tractive effort characteristic requested by the operator of the locomotive on which the throttle is installed. Together, the discrete output positions shall cover the entire range of possible speed/tractive effort characteristics. If the throttle has continuously variable segments, the event recorder shall capture either:

- (1) The exact level of speed/tractive effort characteristic requested, on a scale of zero (0) to one hundred percent (100%) of the output variable or

- (2) A value converted from a percentage to a comparable 0 to 8 digital signal.

*Tier II* means operating at speeds exceeding 125 mph but not exceeding 150 mph.

*Time* means either “time-of-day” or “elapsed time” (from an arbitrarily determined event) as determined by the manufacturer. In either case, the recorder must be able to convert to an accurate time-of-day with the time zone stated unless it is Greenwich mean time (UTC).

*Toilet facility* means a system that automatically or on command of the user removes human waste to a place where it is treated, eliminated, or retained such that no solid or non-treated liquid waste is thereafter permitted to be released into the bowl, urinal, or room and that prevents harmful discharges of gases or persistent offensive odors.

*Transfer service* means a freight train that travels between a point of origin and a point of final destination not exceeding 20 miles and that is not performing switching service.

*Ultimate strength* means the load at which a structural member fractures or ceases to resist any load.

*Unsanitary* means having any condition in which any significant amount of filth, trash, or human waste is present in such a manner that a reasonable person would believe that the condition might constitute a health hazard; or strong, persistent, chemical or human waste odors sufficient to deter use of the facility, or give rise to a reasonable concern with respect to exposure to hazardous fumes. Such conditions include, but are not limited to, a toilet bowl filled with human waste, soiled toilet paper, or other products used in the toilet compartment, that are present due to a defective toilet facility that will not flush or otherwise remove waste; visible human waste residue on the floor or toilet seat that is present due to a toilet that overflowed; an accumulation of soiled paper towels or soiled toilet paper on the floor, toilet facility, or sink; an accumulation of visible dirt or human waste on the floor, toilet facility, or sink; and strong, persistent chemical or human waste odors in the compartment.

*Upper 99% confidence limit* means the noise level below which 99% of all noise level measurements must lie.

*Washing system* means a system for use by railroad employees to maintain

## § 229.7

personal cleanliness that includes a secured sink or basin, water, antibacterial soap, and paper towels; or antibacterial waterless soap and paper towels; or antibacterial moist towelettes and paper towels; or any other combination of suitable antibacterial cleansing agents.

*Wide-nose locomotive* means a locomotive with a short hood that spans the full width of the locomotive.

[70 FR 37938, June 30, 2005, as amended at 71 FR 36911, June 28, 2006; 71 FR 47666, Aug. 17, 2006; 71 FR 61857, Oct. 19, 2006; 71 FR 63136, Oct. 27, 2006]

### § 229.7 Prohibited acts.

(a) The Locomotive Inspection Act (45 U.S.C. 22-34) makes it unlawful for any carrier to use or permit to be used on its line any locomotive unless the entire locomotive and its appurtenances—

(1) Are in proper condition and safe to operate in the service to which they are put, without unnecessary peril to life or limb; and

(2) Have been inspected and tested as required by this part.

(b) Any person (an entity of any type covered under 1 U.S.C. 1, including but not limited to the following: a railroad; a manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any independent contractor providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirement of this part or of the Locomotive Inspection Act or causes the violation of any such requirement is subject to a civil penalty of at least \$550 and not more than \$11,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$27,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. See appendix B to this

## 49 CFR Ch. II (10–1–07 Edition)

part for a statement of agency civil penalty policy.

[45 FR 21109, Mar. 31, 1980, as amended at 53 FR 28601, July 28, 1988; 53 FR 52931, Dec. 29, 1988; 63 FR 11622, Mar. 10, 1998; 69 FR 30594, May 28, 2004]

EFFECTIVE DATE NOTE: At 72 FR 51197, Sept. 6, 2007, paragraph (b) of § 229.7 was amended by removing the numerical amount “\$11,000” and adding in its place the numerical amount “\$16,000”, effective October 9, 2007.

### § 229.9 Movement of non-complying locomotives.

(a) Except as provided in paragraphs (b), (c) and § 229.125(h), a locomotive with one or more conditions not in compliance with this part may be moved only as a lite locomotive or a dead locomotive after the carrier has complied with the following:

(1) A qualified person shall determine—

(i) That it is safe to move the locomotive; and

(ii) The maximum speed and other restrictions necessary for safely conducting the movement;

(2)(i) The engineer in charge of the movement of the locomotive shall be notified in writing and inform all other crew members in the cab of the presence of the non-complying locomotive and the maximum speed and other restrictions determined under paragraph (a)(1)(ii) of this section.

(ii) A copy of the tag described in paragraph (a)(3) of this section may be used to provide the notification required by paragraph (a)(2)(i) of this section.

(3) A tag bearing the words “non-complying locomotive” and containing the following information, shall be securely attached to the control stand on each MU or control cab locomotive and to the isolation switch or near the engine start switch on every other type of locomotive—

(i) The locomotive number;

(ii) The name of the inspecting carrier;

(iii) The inspection location and date;

(iv) The nature of each defect;

(v) Movement restrictions, if any;

(vi) The destination; and